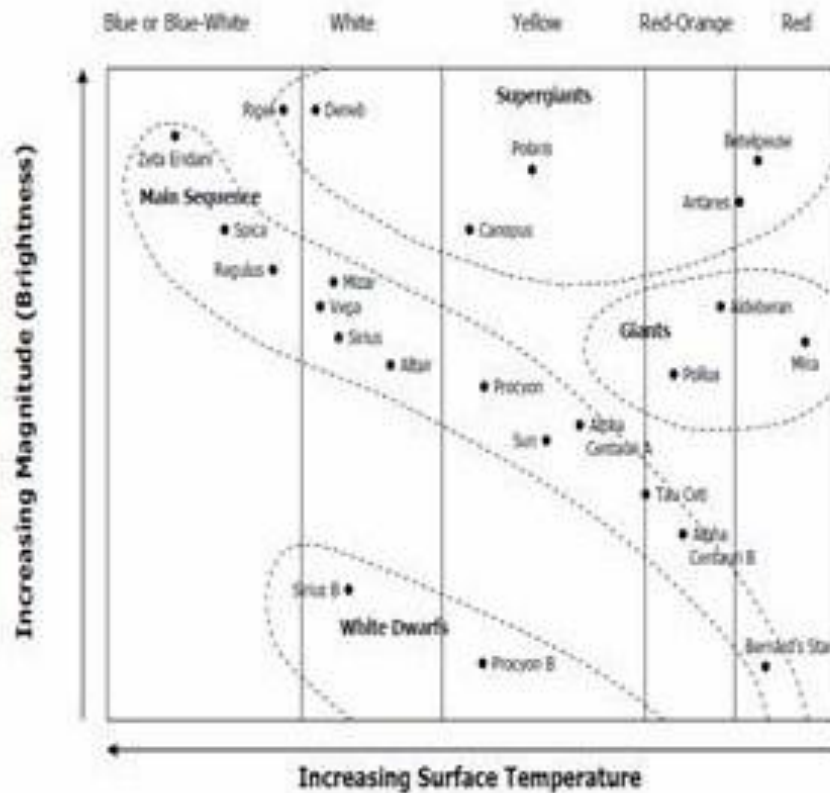


TEK 8 Test Review

1. List the three subatomic particles and give each of their masses.
 2. Describe and draw an illustration (Bohr Model) of the most common element in the Universe.
 3. Describe and draw an illustration (Bohr Model) of the second most common element in the Universe.
 4. Describe and draw an illustration (Bohr Model) of the second most common isotope of Hydrogen in the Universe.
 5. Explain how elements other than Hydrogen and Helium are created in the Universe.
 6. Define Nebula
 7. Describe our galactic location.
 8. Define Astronomical Unit.
 9. List the following in terms of ascending mass: Asteroids, Dust, Electrons, Galaxies, Neutrons, Planets, Protons, Stars.
 10. Which celestial body could replace Star on the previous list (answer to #9)?
 11. Which celestial object could replace Asteroid on the previous list (answer to #9)?
 12. List the types of Electromagnetic Radiation (from the Electromagnetic Spectrum) in order of ascending frequency (and descending wavelength).
 13. Give the acronym that describes the visible light spectrum in order of longest wavelength to shortest wavelength.
 14. Explain why fusion occurs in stars, and doesn't occur in planets or nebulae.
15. Galaxies are best described as -
- A. rare in the universe.
 - B. always spherical in shape.
 - C. clusters of billions of stars.
 - D. clouds of gases around stars.

The Hertzsprung-Russell Diagram



16. Stars are classified on the Hertzsprung - Russell diagram according to their absolute magnitude and their surface temperatures at a given time in a star's life cycle. What classification would a star have if it was very hot and very bright?

- F. Main Sequence
- G. White Dwarf
- H. Supergiant
- J. Giant

17.



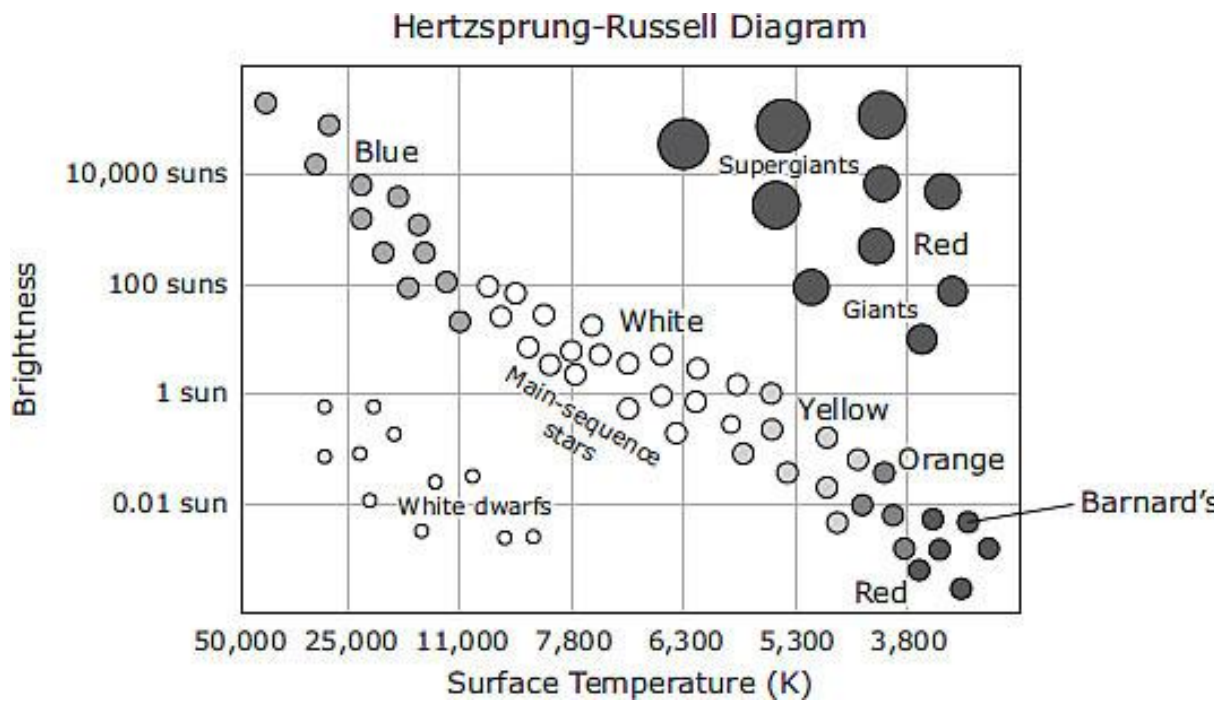
Stars in the universe are classified on the Hertzsprung – Russell Diagram as a tool to help astronomers determine the life stage of a star. What is one limitation when using this tool?

- A. The diagram does not show the approximate age of a star.
- B. A star's surface temperature is not always determined by its color.
- C. Many stars found in the universe are not included on the diagram.
- D. The diagram was designed incorrectly because the surface temperature should increase not decrease when moving left to right.

18. The Milky Way galaxy is described as a disk of stars orbiting a central point on the disk. Which of these best explains why people on Earth cannot see the entire shape of the Milky Way?

- F. Earth is a part of this galaxy.
- G. Many more stars exist outside the galaxy.
- H. The stars in the center of the galaxy are extremely small.
- J. The center of the galaxy consists of a dense cluster of stars.

19 The Hertzsprung-Russell diagram below shows how the brightness, surface temperature, and color of stars are related.



Which of these observations of Barnard's Star is most likely accurate?

- A. Barnard's Star is less bright than the sun, has a surface temperature below 3,800 K, and is red.
- B. Barnard's Star is less bright than the sun, has a surface temperature above 3,800 K, and is red.
- C. Barnard's Star is brighter than the sun, has a surface temperature below 5,300 K, and is yellow.
- D. Barnard's Star is brighter than the sun, has a surface temperature above 5,300 K, and is yellow.

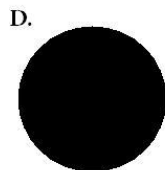
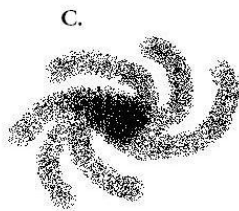
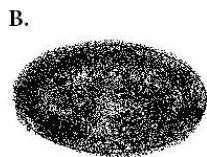
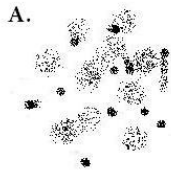
20. Most stars in the universe are part of a galaxy. Which statement would identify our Sun's placement in our galaxy?

- F. The Sun can be found in the center of the galaxy because it is the center of our solar system.
- G. The galaxy, which our sun is a part of, is disc-shaped; the sun is found near the outer edge.
- H. Our Sun is part of a circular galaxy and it is found on the outer edge.
- J. The Sun, like other stars in our galaxy, can be found close to a bulge in the center.

21. Why does Earth get more energy from the sun than from all the other stars in the universe combined?

- A. The sun is much larger than the other stars.
- B. The sun is much hotter than the other stars.
- C. The sun is much more dense than the other stars.
- D. The sun is much closer than the other stars.

22. The sun is a medium-sized star that sits at the edge of the Milky Way Galaxy. Which of the following diagrams correctly demonstrates the shape of the Milky Way Galaxy?



- F. A.
- G. B.
- H. C.
- J. D.

23. A light-year is defined as-

- A. the distance from Earth to the Sun.
- B. the distance from Earth to Alpha Centauri.
- C. the distance light traveled in one day.
- D. the distance light travels in one year.

24. The stars in the universe, except the Sun, are very far away. The distance from Earth to a star is determined using the measurement of light years. Since the Sun's light only takes about eight minutes to reach Earth, then the other stars' light can take many years before it is visible to people on Earth. What is a dilemma when considering the light coming from a star that is 40 light years away from Earth?

- F. Many stars are a lot closer to Earth than 40 light years so their light waves will reach Earth faster than the Sun.
- G. The absolute magnitude of a star that is 40 light years away would be very dim to the people on Earth.
- H. All stars are 40 light years away because their sizes, in the sky, are all the same as we observe them.
- J. A star that is 40 light years away could already be deceased before its light reaches Earth.



25. The picture shows sand used to make a model of a galaxy. In the model, each grain of sand best represents —

- A. a comet
- B. a black hole
- C. an asteroid
- D. a star